

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/06588

A. CLASSIFICATION OF SUBJECT MATTER		
IPC(7) : A61K 39/395, 39/00, 38/00, 38/16; G01N/ 33/53		
US CL : 424/198.1, 130.1, 178.1, 184.1; 514/ 12; 435/ 7.1; 436/500		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
U.S. : 424/198.1, 130.1, 178.1, 184.1; 514/ 12; 435/ 7.1; 436/500		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
Medline, Biosis, Embase, WPIDS, USPatfull search terms: HSP47 and treat cancer, antibody		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	Database Medline on Dialog, US National Library of Medicine, (Bethesda, MD, USA), No. 1999436824. RAZZAQUE et al. 'The possible role of colligin/hsp 47, a collagen binding protein in the pathogenesis of human and experimental fibrotic diseases'. Histology and Histopathology. October 1999, Vol. 14, No. 4, pages 1199-1212.	1-4, 7-23, 29-32
A	Database Medline on Dialog, US National Library of Medicine, (Bethesda, MD, USA), No. 1999241927. NORRIS et al. 'Cell Surface Colligin/Hsp47 associates with tetraspanin protein CD9 in epidermoid carcinoma cell lines'. Journal of cellular Biochemistry. 01 May 1999, Vol. 73, No. 2, pages 248-258.	1-4, 7-23, 29-32

<input type="checkbox"/> Further documents are listed in the continuation of Box C	<input type="checkbox"/> See patent family annex.
* Special categories of cited documents	** later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
A document defining the general state of the art which is not considered to be of particular relevance	**X* document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
B earlier document published on or after the international filing date	**Y* document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
C document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	
D document referring to an oral disclosure, use, exhibition or other means	
E document published prior to the international filing date but later than	

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

Authorized officer

Geetha P. Bansal

Examination No. 003-000000

in PCT ISA 221 second sheet

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/06588

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☒ Claims Nos.: 5-6, 24-28
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

No CRF was submitted for this case. Hence these claims could not be searched.

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

OTHER REASONS:

☐ No protest accompanied the payment of additional search fees

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
 US Department of Commerce
 United States Patent and Trademark
 Office, PCT
 2011 South Clark Place Room
 CP2/5C24
 Arlington, VA 22202
 ETATS-UNIS D'AMERIQUE
 in its capacity as elected Office

Date of mailing (day/month/year) 23 January 2001 (23.01.01)	
International application No. PCT/US00/06588	Applicant's or agent's file reference UNIMD 4 WO
International filing date (day/month/year) 15 March 2000 (15.03.00)	Priority date (day/month/year) 15 March 1999 (15.03.99)
Applicant SAUK, John, J.	

1. The designated Office is hereby notified of its election made:



in the demand filed with the International Preliminary Examining Authority on:

13 October 2000 (13.10.00)



in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

BEST AVAILABLE COPY

International Bureau of the
 World Intellectual Property Organization
 11, rue de la Gare, CH-1202 Geneva 20, Switzerland

Examination by the designated Office
 is required by Article 17, paragraph 1, of the Treaty

and by Rule 17.1 of the Regulations under the Treaty

Examination by the designated Office
 is optional by Article 17, paragraph 2, of the Treaty

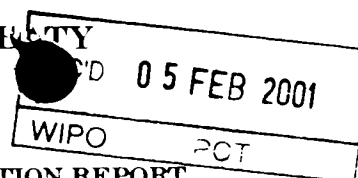
Examination by the designated Office
 is optional by Article 17, paragraph 2, of the Treaty

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference UNIMD + WO	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IEA/416)
International application No. PCT/US00/06588	International filing date (day/month/year) 15 MARCH 2000	Priority date (day/month/year) 15 MARCH 1999
International Patent Classification (IPC) or national classification and IPC Please See Supplemental Sheet.		
Applicant UNIVERSITY OF MARYLAND, BALTIMORE		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets.
- ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of 0 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability, citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand

Date of completion of this report

COMMUNICATIONS SECTION
Box PCT
Washington, D.C. 20531

Facsimile No. (703) 305-5230

Telephone No. (703) 305-5000

I. Basis of the report1. With regard to the **elements** of the international application:*

- ☒ the international application as originally filed
- ☒ the description:
pages 1-79, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____
- ☒ the claims:
pages 80-83, as originally filed
pages NONE, as amended (together with any statement) under Article 19
pages NONE, filed with the demand
pages NONE, filed with the letter of _____
- ☒ the drawings:
pages NONE, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____
- ☒ the sequence listing part of the description:
pages NONE, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of☒ the description, pages NONE

This report has been prepared in accordance with the provisions of Article 34 of the PCT and Rule 47.1 of the PCT Regulations, and it is hereby certified that the information disclosed in this report is true and correct, and that the information disclosed in this report is not to be used for any purpose other than the purpose for which it was disclosed.

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing amendments to the international application is referred to in this report as "amended".

IPC Class. A 61K 31/708

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
/USoo/06588

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been and will not be examined in respect of:

☐ the entire international application.

☒ claims Nos. 5-6, 24-28

because:

☐ the said international application, or the said claim Nos. _ relate to the following subject matter which does not require international preliminary examination (*specify*).

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. _ are so unclear that no meaningful opinion could be formed (*specify*).

☐ the claims, or said claims Nos. _ are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for said claims Nos. 5-6, 24-28.

☒ the computer readable form has not been furnished or does not comply with the standard

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

/US00/06588

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. statement

Novelty (N)	Claims <u>1-4, 7-23, 29-32</u>	YES
	Claims <u>NONE</u>	NO
Inventive Step (IS)	Claims <u>1-4, 7-23, 29-32</u>	YES
	Claims <u>NONE</u>	NO
Industrial Applicability (IA)	Claims <u>1-4, 7-23, 29-32</u>	YES
	Claims <u>NONE</u>	NO

2. citations and explanations (Rule 70.7)

Claims 1-4, 7-23, 29-32 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest the claimed invention drawn to the therapeutic uses of HSP47/colligen, and the pharmaceutical composition and kit comprising HSP47.

NEW CITATIONS

NONE

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/06588

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 10

CLASSIFICATION:

The International Patent Classification (IPC) and/or the National classification are as listed below:

IPC(7): A61K 39/395, 39/00, 38/0038/16; G01N/ 33/53 and US Cl.: 424/198.1, 130.1, 178.1, 184.1; 514/ 12; 435/ 7.1; 436/500

PATENT COOPERATION TREATY

PCT

REC'D 22 MAY 2001	
WIPO	PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference UNIMD 4 WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/116)	
International application No. PCT/US00/06588	International filing date (day/month/year) 15 MARCH 2000	Priority date (day/month/year) 15 MARCH 1999
International Patent Classification (IPC) or national classification and IPC Please See Supplemental Sheet		
Applicant UNIVERSITY OF MARYLAND, BALTIMORE		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 0 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

**CORRECTED
VERSION**

Date of submission of this report: _____

[Handwritten signatures and initials]

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/06588

I. Basis of the report

1. With regard to the **elements** of the international application:*

- ☒ the international application as originally filed
- ☒ the description:
pages 1-79 , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of _____
- ☒ the claims:
pages 80-83 , as originally filed
pages NONE , as amended (together with any statement) under Article 19
pages NONE , filed with the demand
pages NONE , filed with the letter of _____
- ☒ the drawings:
pages NONE , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of _____
- ☒ the sequence listing part of the description:
pages NONE , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b))
- ☐ the language of publication of the international application (under Rule 48.3(b))
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing

- ☐ contained in the international application in printed form
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4. ☒ The amendments have resulted in the cancellation of

- ☒ the description, pages NONE

* beyond the disclosure as filed, as indicated in the Statement of Inventor under Article 14.

* Replacement sheets which have been furnished to the receiving Office in respect of an international application under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they are not in the original language (Rules 26.1 & 26.2).

* The replacement sheets have not been furnished to the receiving Office.

* PCT/US00/06588

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/06588

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. statement

Novelty (N)	Claims	<u>1-32</u>	YES
	Claims	<u>NONE</u>	NO
Inventive Step (IS)	Claims	<u>1-32</u>	YES
	Claims	<u>NONE</u>	NO
Industrial Applicability (IA)	Claims	<u>1-32</u>	YES
	Claims	<u>NONE</u>	NO

2. citations and explanations (Rule 70.7)

Claims 1-32 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest the claimed invention drawn to the therapeutic uses of HSP47 collagen, and the pharmaceutical composition and kit comprising HSP47.

----- NEW CITATIONS -----

NONE

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

National application No

PCT/US00/06588

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 10

CLASSIFICATION:

The International Patent Classification (IPC) and/or the National classification are as listed below:

IPC(7): A61K 39/395, 39/00, 38/00, 38/16; G01N/ 33/53 and US Cl. 424/198.1, 130.1, 178.1, 184.1; 514/ 12; 435/ 7.1; 436/500